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## Guest blogger Alan Trounson — May's stem cell highlights

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*Each month CIRM President Alan Trounson gives his perspective on recently published papers he thinks will be valuable in moving the field of stem cell research forward. This month's report, along with an archive of past reports, is available on the CIRM website.*

The first paper I highlight in this month's summary, purporting to have found master lung stem cells, is already generating controversy. (See our blog entry: Lung stem cell found, controversy ensues) Scientists have generally not been believed that one set of adult stem cells could generate all the types of tissues required to form complex mature lung. Regardless of whether others are able to reproduce this work, it is sure to generate interest because advances in the field of regenerating healthy lung tissue is something that could benefit millions of severely disabled patients.

This month's literature continued to produce a yin and yang of good news and disappointment for reprogrammed cells. It saw one team directly reprogram skin tissue into functional liver cells and another produce a model of schizophrenia in a lab dish (See From stem cell to schizophrenia in a dish). That paper showed real differences between neurons grown from iPS cells made from normal individuals and those with the disease-and those differences could yield drug targets. But the literature also revealed that iPS cells could face immune rejection even when they are transplanted into an animal that is genetically matched. (See iPS cell smack down) We have to continuously tell ourselves that the iPS field is only five years old and these mixed results will get worked out and understood over time.

As we move closer to the clinic, we are increasingly concerned with efficiency of cell production and getting quantities of cells sufficient to run a clinical trial. This month saw papers greatly improving the efficiency of generating blood precursor cells from embryonic and induced stem cells and of generating neural precursor cells from embryonic stem cells.

Last, is a paper that offers some hope for my hair follicle challenged colleagues. Actively growing patches of hair appear to require some level of cross talk between hair stem cells. But this paper does have a more serious note. This same communication between stem cells may be critical in tissues like the intestine that have rapid cell turn over.

I hope you find the somewhat longer descriptions in my full report interesting.

Tags: Trounson

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